

Amendments to the Claims

Please cancel Claims 1-34. Please add new Claims 35-55. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1.-34. (Canceled)

35. (New) A method for continuously forming an optical film from a radiation curable liquid material comprising:

providing a mold that defines a shape for optical structures to be formed in the optical film;

placing the radiation curable liquid material in the mold;

positioning a radiation transparent base film adjacent to the radiation curable liquid material in the mold;

positioning a radiation source such that it can irradiate the curable liquid material while the radiation curable material is in the mold;

overlapping a mask film on the base film, the mask film being disposed between the radiation source and the base film, wherein the mask film comprises a pattern that further defines areas of the optical film where distortions are to be made in the shape of the optical structures; and

curing the liquid material by exposing it to the radiation source, wherein radiation passes through the mask film and through the transparent base film at the same time to reach the liquid material in the mold, and to thereby cure the liquid material and at the same time to provide cured optical structures with the distortions in their shape, the resulting distorted optical structures thus being formed via differential exposure to radiation during curing, as caused by the mask film.

36. (New) The method of Claim 35 wherein the optical structure is formed in a surface of the optical film, opposite the base film.

37. (New) The method of Claim 35 wherein the radiation source emits ultraviolet light.
38. (New) The method of Claim 35 wherein the radiation curable liquid material is a monomer is selected from polyester, urethane, epoxy acrylates or methacrylates.
39. (New) The method of Claim 35 wherein the pattern is configured in the form of a logo, geometric form, or alphanumerics.
40. (New) The method of Claim 35 wherein the pattern is formed on the mask film.
41. (New) The method of Claim 35 wherein the radiation curable liquid is deposited between the base film and the mold.
42. (New) The method of Claim 41 wherein the blocking pattern is removably placed on the base film.
43. (New) The method of Claim 35, wherein the optical structures comprise linear prisms, lenticular structures, cube-corner prisms, lens structures, and/or sub-wavelength structures.
44. (New) The method of Claim 35, wherein cured optical film is used in a display.
45. (New) The method of Claim 43, wherein the display includes a liquid crystal display.
46. (New) The method of Claim 35, wherein the pattern is used to mark the optical film.
47. (New) An apparatus for forming an optical film comprising:
 - a mold for defining a shape for optical structures in the optical film;
 - a liquid material dispenser, wherein said liquid material dispenser feeds a radiation curable liquid material to the mold;

a mask film, for defining a pattern that further defines areas of the optical film where distortions are to be made to the optical structures therein;

a base film dispenser, for feeding a transparent base film between the mask film and the mold; and

a radiation source positioned for simultaneously curing and patterning the liquid material by irradiating the liquid material through the overlapping mask film and base film, such that the liquid material is cured to form the optical film, and such that the distortions as defined by the mask film are patterned in the optical structures at the same time that they are cured, via differential exposure to the radiation in an area of the radiation curable liquid material blocked from the radiation source by the pattern.

48. (New) The apparatus of Claim 47 wherein the optical structures are formed in a surface of the optical film that is opposite a surface of the optical film that contacts the base film.

49. (New) The apparatus of Claim 47 wherein said radiation source emits ultraviolet light.

50. (New) The apparatus of Claim 47 wherein said radiation curable monomer material is selected from a material consisting of polyester, urethane, epoxy acrylates or methacrylates.

51. (New) The apparatus of Claim 47 wherein the pattern is configured in the form of a logo, geometric forms or alphanumerics.

52. (New) The structure of Claim 47 wherein said first cured portion has an index of refraction that is different than the index of refraction of the second cured portion.

53. (New) The structure of Claim 47 wherein said first cured portion has a density that is different than the density of the second cured portion.

54. (New) An apparatus for making a continuous optical film having parallel prism structures, the apparatus comprising:

a rotating cylinder mold having linear grooves formed on an outer surface thereof, the linear grooves used as a mold for defining the parallel prism structures with aligned peaks;

a liquid material dispenser, wherein said liquid material dispenser feeds a radiation curable liquid material onto the rotating cylinder mold at a dispensing location;

a first roller, for supplying a continuous, radiation transparent optical film;

a second roller, for supplying a continuous mask film near the dispensing location, the continuous mask film having a pattern used in further defining features of the optical film;

a first pinch roller, for placing the continuous mask film adjacent to the continuous optical film near the dispensing location, and for positioning the optical film and mask film against the rotating mold such that the optical film is positioned nearest the rotating mold and the mask film is positioned outside of the optical film;

a radiation source, disposed after the first pinch roller, for providing radiation for simultaneously curing and patterning the liquid material by irradiating the liquid material through the adjacent mask film and optical film, such that the radiation travels first through the mask film and then through the transparent optical film before curing the liquid material, and such that the radiation source causes simultaneous patterning of the liquid material, to thereby define the optical film and form deformations in the prism peaks in an area of the liquid material blocked from the irradiation by the pattern;

a second pinch roller, disposed at a second location adjacent the rotating mold, for further holding the mask film and optical film in position with respect to the rotating mold;

a first wind-up roller, for collecting the optical film; and

a second wind-up roller, for collecting the mask film.

55. (New) A method for making a continuous optical film having parallel prism structures, the method comprising:

providing a rotating cylinder mold having linear grooves formed on an outer surface thereof, the linear grooves used as a mold for defining the parallel prism structures with aligned peaks;

dispensing a radiation curable liquid material onto the rotating cylinder mold at a dispensing location;

continuously feeding a radiation transparent optical film and a mask film, the mask film having a pattern used in further defining features of the optical film, near the dispenser location;

positioning the continuous mask film adjacent to the continuously fed optical film near the dispensing location such that the optical film and mask film are placed against the rotating mold, wherein the optical film is positioned nearest the rotating mold and the mask film is positioned outside of the optical film;

providing a radiation source for simultaneously curing and patterning the liquid material by irradiating the liquid material through the adjacent mask film and optical film, such that the radiation travels first through the mask film and then through the transparent optical film before curing the liquid material, and such that the radiation source causes simultaneous patterning of the liquid material while the liquid material is being cured, to thereby define the optical film including in prisms having deformed peaks in an area of the liquid material blocked from the irradiation by the pattern;

separating the adjacent mask film and optical film; and

thereafter, individually collecting the optical film and the mask film.